

REMARKS

Claims 1-13, 21-25 and 28, 29 have been canceled. The limitations of Claims 23-25 and 29 have been included in Claim 14. The amendment of Claim 14 is further supported at page 18 of the specification and by the Examples. See the Tables starting at page 24 of the specification.

The amendment of Claim 15 is supported at page 14, lines 30-34 of the specification.

New Claim 43 is supported at page 14, line 36 to page 15, line 29.

No new matter is believed to have been added by entry of this amendment. Entry and favorable reconsideration are respectfully requested.

Upon entry of this amendment Claims 14-15 and 26, 27, 30-43 will now be active in this application.

Applicants wish to thank Examiner Bernstheyn for the helpful discussion with Applicants' Representative on July 2, 2008. The claims as amended were discussed in view of the cited references.

Applicants respectfully request reconsideration of the application, as amended, in view of the following remarks.

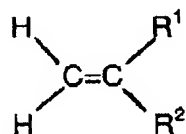
Amended Claim 14 relates to a method for solvent deparaffinization of paraffinic mineral oil distillates, comprising:

adding a dewaxing additive and a solvent to said paraffinic mineral oil distillates, to obtain a solvent-paraffinic mineral oil mixture;

stirring the mixture until a clear solution results;

cooling the solution to below -20°C at a defined rate, thereby forming paraffin crystals which form a filter cake which is porous and permeable to the solution; and separating said paraffin crystals from said solution by filtration; increasing a filtration volume per filtration time compared to the filtration volume per filtration time using no dewaxing additive; and obtaining deparaffinized mineral oil distillates; wherein said dewaxing additive comprises in polymerized form the following free-radically polymerizable monomers of Formulae A and B:

Formula A:



wherein

$\text{R}^1 = \text{H}$ or CH_3 ,

$\text{R}^2 =$ phenyl, benzyl, naphthyl, anthranyl, phenanthryl, N-pyrrolidonyl, N-imidazolyl,

2-pyridyl, 4-pyridyl or an alkyl-substituted aromatic substituent or

$\text{R}^2 = \text{COOR}^3$ where $\text{R}^3 = \text{H}$ or R^3 is a linear or branched alkyl radical of $\text{C}_1\text{-C}_{10}$

or

R^2 is a heteroatom-substituted radical $-(\text{CH}_2)_n\text{X}$ where $\text{X} = \text{OH}$ or $\text{X} = \text{N}(\text{R}^4)_2$

wherein $n = 1\text{-}10$ and R^4 is in each case independently H or $\text{R}^4 = \text{C}_1\text{-C}_4\text{-alkyl}$

or

R^2 is $-(\text{CH}_2\text{CH}_2\text{O})_m\text{R}^5$ wherein $m = 1\text{-}90$ and $\text{R}^5 = \text{H}$ or $\text{R}^5 = \text{C}_1\text{-C}_{18}$ or R^2 is a benzyl, phenyl or cyclohexyl radical

or

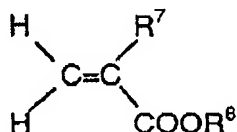
$\text{R}^2 = \text{CONHR}^6$ wherein $\text{R}^6 = \text{H}$ or R^6 is a linear or branched alkyl radical of $\text{C}_1\text{-C}_{10}$

or

R^6 is a heteroatom-substituted radical $-(CH_2)_nX$ where $X = OH$ or $X = N(R^4)_2$

wherein $n = 1-10$ and R^4 is in each case independently H or $R^4 = C_1-C_4$ -alkyl;

Formula B:



wherein $R^7 = H$ or CH_3 , and

R^8 radical = linear or branched alkyl radicals of $C_{12}-C_{40}$, and,

optionally further customary dewaxing additives.

Claim 15 provides that in the method according to Claim 14, the addition rate of the copolymer is 0.005-0.5%.

Amended Claim 26 provides that the paraffin crystals grow epitaxially.

New Claim 43 provides that the obtained deparaffinized mineral oil distillates show an increased degree of dewaxing compared to a method in which a styrene-free dewaxing aid is used.

Applicants wish to thank the Examiner for allowing Claim 42.

Since the limitations of Claims 23-25 have been included in Claim 14 and since Claims 23-25 were only rejected over Schauber in view of Mueller, all other rejections of record are obviated by the amendment of Claim 14.

The rejection over Schauber in view of Mueller should be withdrawn in view of the following remarks.

Schauber and Mueller are **in different fields of endeavor** and are not both in the field of new polymer dewaxing additives. **Dewaxing additives are very different from pour point depressants as discussed below.** Accordingly, it is improper to combine both references.

"In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). See also *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986); *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992).

It is an object of the present invention to provide copolymers or polymers having improved effectiveness in the solvent deparaffinization of paraffinic mineral oil distillates, in particular when used in different feedstocks and using different solvent systems. In particular, the more effective dewaxing aids should be provided very substantially on the basis of existing starting materials which should cause no substantial changes in the performance of the deparaffinization technology of crude oils or crude oil products. See page 2, 1st paragraph of the specification.

Most notably, Schauber is not in Applicants' field of endeavor and is not reasonably pertinent for providing dewaxing additives or a method for solvent deparaffinization of paraffinic mineral oil distillates using a dewaxing additive as claimed. Schauber discloses

viscosity index improving copolymers (see the abstract) and **NOT** a method in which paraffinic mineral oil distillates are deparaffinized by adding a dewaxing additive to said paraffinic mineral oil distillates, to obtain paraffin crystals; and separating said paraffin crystals as claimed in Claim 14.

Col. 1, lines 6-14 of Schauber state that

Lubricating oil compositions for internal combustion engines typically include polymeric additives for improving the viscosity index of the lubricating composition, that is, modifying the relationship between temperature and the viscosity of the oil composition to reduce the temperature dependence of the viscosity and to lower the "pour point" of the composition, that is, to allow the composition to remain fluid at reduced temperature.

However, pour point depressants (PPD) and dewaxing aids (DWA) are two different things as shown by the attached literature:

pour point depressant - R. M. Mortier, S. T. Orszulik; *Chemistry & Technology of Lubricants*; 1992; 6.2; 165-167; Blackie Academic & Professional; and

dewaxing aid - Th. R. Lynch; *Process Chemistry of Lubricant Base Stocks*; 2008; 6.2; 148-154; CRC Press Taylor & Francis Group.

A **pour point depressant** is used to improve the low temperature properties of **lubricants** whereas a **dewaxing aid** is used **to improve the process in a refinery**. The latter one includes the step of cutting of the wax as completely as possible from the oil. The **dewaxing aid will be removed together with the wax. The dewaxed oil is then more or less free of dewaxing aid.**

In contrast, a **pour point depressant** is not meant to remove anything it only changes the physical properties and **stays within the lubricant**.

Another aspect is that pour point depressants and dewaxing aids will be used at totally different positions along the crude oil - lubricant value chain.

Schauber is not in the field of applicant's endeavor and is not reasonably pertinent to

the particular problem with which the inventor was concerned, namely providing “copolymers or polymers having improved effectiveness in the solvent deparaffinization of paraffinic mineral oil distillates, in particular when used in different feedstocks and using different solvent systems” (specification at page 2, 1st paragraph).

Schauber is not in the field of Mueller who discloses a method of dewaxing a wax-containing petroleum products with at least one solvent suitable for dewaxing and a polymeric dewaxing aid. (see the abstract). Schauber relates to **pour point depressants** which **stay within the lubricant** while Mueller relates to a method for dewaxing waxy petroleum products. The **dewaxing aid will be removed together with the wax. The dewaxed oil is then more or less free of dewaxing aid.**

Mueller does not disclose or suggest a method, as claimed in Claim 14, in which the dewaxing additive and a solvent are added to the paraffinic mineral oil distillates, to obtain a solvent-paraffinic mineral oil mixture;

stirring the mixture until a clear solution results;

cooling the solution to below -20°C at a defined rate, thereby forming paraffin crystals which form a filter cake which is porous and permeable to the solution; and

separating said paraffin crystals from said solution by filtration;

increasing a filtration volume per filtration time compared to the filtration volume per filtration time using no dewaxing additive; and

obtaining deparaffinized mineral oil distillates.

The combination of Schauber and Mueller is improper because they are in different fields of endeavor.

Even if Schauber and Mueller are combined, the claimed invention does not result.

Schauber and Mueller fail to disclose or suggest a method for solvent deparaffinization of paraffinic mineral oil distillates as claimed in **Claim 14**. Most notably there is no disclosure or suggestion of the use of the claimed dewaxing aid in the claimed method in which the dewaxing additive and a solvent are added to the paraffinic mineral oil distillates, to obtain a solvent-paraffinic mineral oil mixture;

stirring the mixture until a clear solution results;

cooling the solution to below -20°C at a defined rate, thereby forming paraffin crystals which form a filter cake which is porous and permeable to the solution; and

separating said paraffin crystals from said solution by filtration;

increasing a filtration volume per filtration time compared to the filtration volume per filtration time using no dewaxing additive; and

obtaining deparaffinized mineral oil distillates.

In addition, there is no disclosure or suggestion in Schauber and Mueller, alone or in combination, of the addition rate of the copolymer of 0.005-0.5%, as claimed in **Claim 15**.

In addition, there is no disclosure or suggestion in Schauber and Mueller, alone or in combination, that the paraffin crystals grow epitaxially, as claimed in **Claim 26**.

Further, there is no disclosure or suggestion in Schauber and Mueller, alone or in combination, that the obtained deparaffinized mineral oil distillates show an increased degree of dewaxing compared to a method in which a styrene-free dewaxing aid is used, as claimed in **Claim 43**.

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Therefore, the rejection of Claims 2-8, 11-15, 21-27, 29 and 30 under 35 U.S.C. § 103(a) over Schauber and Mueller is believed to be unsustainable as the present invention is neither anticipated nor obvious and withdrawal of this rejection is respectfully requested.

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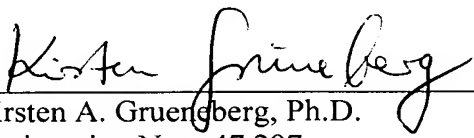
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This application presents allowable subject matter, and the Examiner is kindly requested to pass it to issue. Should the Examiner have any questions regarding the claims or otherwise wish to discuss this case, he is kindly invited to contact Applicants' below-signed representative, who would be happy to provide any assistance deemed necessary in speeding this application to allowance.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon

Customer Number
22850


Kirsten A. Gruenberg, Ph.D.
Registration No.: 47,297